

on April 29 and 30, overflowed approximately 6,000 acres and damaged crops to the extent of about \$100,000 and tangible property to about \$25,000. The greater part of the damage occurred in Montgomery County, Kans. Eight thousand dollars was saved through the Weather Bureau flood warnings.

Damage amounting to about \$10,500 resulted from the Kansas and Big Blue River floods—\$6,000 in railroad and bridge damage near Belvue, Kans., and \$4,500 in the vicinity of Beatrice, Nebr. The value of warnings issued for these rises was about \$3,500.

The remaining May floods were, in the main, unimportant. That in the Illinois River, continuing from April, caused no loss and little inconvenience. On the lower Rio Grande slight damage was done to a road under construction near Brownsville, Tex. The Pacific drainage rises were without material consequence.

A belated report of damages resulting from the Tallahatchie River flood of January-April places the loss in crops at \$3,000. The flood beginning on May 18 in this stream will be discussed later.

[All dates in May unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest	
		From—	To—	Stage	Date
EAST GULF DRAINAGE					
Tombigbee: Lock No. 4, Demopolis, Ala.	Feet 39	20	(1)	54.3	28
Black Warrior: Lock No. 10, Tuscaloosa, Ala.	46	19	22	56.5	20
Pearl:					
Edinburg, Miss.	21	19	25	24.9	22
Jackson, Miss.	20	20	(1)	31.9	28
Monticello, Miss.	18	20	23	20.8	20
Columbia, Miss.	18	20	25	21.2	23
West Pearl: Pearl River, La.	13	23	(1)	15.4	24
MISSISSIPPI DRAINAGE					
Illinois:					
Peru, Ill.	14	(2)	14	18.8	Apr. 23
Henry, Ill.	10	(2)	9	13.3	Apr. 25
Peoria, Ill.	18	(2)	4	19.9	Apr. 26
Havana, Ill.	14	(2)	14	16.2	Apr. 28-29
Beardstown, Ill.	14	(2)	14	16.8	Apr. 30
Pearl, Ill.	12	(2)	8	12.7	1-4
Kansas:					
Wamego, Kans.	16	8	8	16.0	8
Topeka, Kans.	21	8	8	22.0	8
Lawrence, Kans.	18	8	8	18.5	8
Smoky Hill: Lindsborg, Kans.	19	7	8	21.5	7
Big Blue:					
Beatrice, Nebr.	16	14	15	17.7	14
Randolph, Kans.	21	8	8	22.7	8
Arkansas:					
Dardanelle, Ark.	20	11	17	24.3	11
Morrilton, Ark.	20	11	12	22.0	12
Yancopin, Ark.	29	13	27	31.5	23
Verdigris:					
Independence, Kans.	30	(2)	1	38.4	1
		8	8	30.4	8
Sageeyah, Okla.	35	2	3	35.3	2
North Canadian: Woodward, Okla.	4	16	16	4.0	16
Petit Jean: Danville, Ark.	20	10	14	25.3	12
White:					
Calico Rock, Ark.	18	11	11	21.3	11
Batesville, Ark.	23	11	12	28.7	12
Georgetown, Ark.	22	14	22	23.2	19
De Valls Bluff, Ark.	24	19	23	24.4	20
Black: Black Rock, Ark.	14	11	12	16.1	12
Catche: Patterson, Ark.	9	20	20	9.0	20
Tallahatchie: Swan Lake, Miss.	25	18	(1)	30.3	29-30
Red:					
Index, Ark.	27	20	21	27.2	21
Fulton, Ark.	28	17	27	32.5	22
Springbank, Ark.	37	23	26	37.7	24
Alexandria, La.	36	25	(1)	41.2	June 5-6
Sulphur:					
Ringo Crossing, Tex.	20	4	24	27.2	17
Finley, Tex.	24	12	28	31.7	19
Cypress: Jefferson, Tex.	18	17	27	28.6	20
Lake Bisteneau: Ninock, La.	28	22		34.6	27
Ouachita:					
Arkadelphia, Ark.	12	{ 11	13	19.2	12
		18	20	19.6	19
Camden, Ark.	30	13	27	40.7	21

1 Continued at end of month.

2 Continued from last month.

[All dates in May unless otherwise specified]

River and station	Flood stage	Above flood stages—dates		Crest		
		From—	To—	Stage	Date	
WEST GULF DRAINAGE						
	<i>Feet</i>			<i>Feet</i>		
Sabine: Logansport, La	25	24	(1)	34.1	28-29	
Trinity:						
Dallas, Tex	25	12	26	36.3	14	
Trinidad, Tex	28	8	(1)	42.7	21	
Long Lake, Tex	40	13	(1)	46.7	23	
Riverside, Tex	40	25	(1)	45.8	29	
Liberty, Tex	25	18	(1)	27.9	June 3	
Trinity, Elm Fork: Carrollton, Tex	7	14	14	7.1	14	
Brazos:						
Waco, Tex	27	18	19	29.3	18	
Washington, Tex	45	21	22	45.9	21	
Rio Grande:						
San Marcial, N. Mex	3	{	(2)	3	3.8	April 28
			6	6	3.1	6
San Benito, Tex	23	31	(2)	23.5	June 2	
PACIFIC DRAINAGE						
Colorado: Parker, Ariz	7	(2)	(1)	9.1	1, 2, 4, 5, 9, 10, 11.	
Colorado, Roaring Fork:						
Carbondale, Colo	5	31	31	5.1	31	
Gunnison: Delta, Colo	9	29	31	9.3	31	

1 Continued at end of month.

2 Continued from last month.

EFFECT OF WEATHER ON CROPS AND FARMING OPERATIONS, MAY, 1930

By J. B. KINCER

General summary.—During the first decade showers and some beneficial rains occurred in the Southwest and parts of the South and Southeast, but in most Eastern States little or no relief from the drought was afforded. In these droughty areas spring planting was retarded and germination and growth were slow, but in the heretofore dry Southwest many areas were too wet, with farm work retarded and some injury from washing soil. Outside of these areas the weather was largely favorable with the crop season 10 days to two weeks ahead of the average, although it was somewhat too cool for best growth in the West.

During the second decade unseasonably low temperatures in the interior valleys retarded growth of warm-weather crops, with more or less local frost injury reported over a considerable area in the central-northern portion of the country. Frequent rains and wet soil delayed farm work in most trans-Mississippi sections, while there was some damage by washing soil and flooding lowlands in the lower Mississippi Valley and sections to the westward; otherwise farm work made generally good progress.

During the last decade temperatures continued too low for good growth and this coolness, together with deficient rainfall, retarded progress of practically all crops, and especially those of the warm-weather variety. Heavy to killing frosts were reported from the northern tier of States from the Lake region westward, but damage was confined chiefly to gardens and truck. Less rainfall in the south-central portion of the country, especially in the lower Mississippi Valley, was favorable, but rain was generally needed in most parts from the Ohio Valley eastward and locally elsewhere.

Small grains.—During the first decade continued dry weather in most parts of the eastern Winter Wheat Belt resulted in rather poor advance of the crop, although there was some temporary relief by showers locally. In Kansas rainfall varied widely, but wheat showed improvement, with heading noted in south-central and southeastern parts. Rains improved conditions in the more south-

western belt and local showers were helpful in the South and East. Spring wheat was growing nicely and oats showed some improvement; other small grains made satisfactory advance.

During the second decade cool weather delayed advance of winter wheat in many sections, but in Kansas growth was satisfactory, except for some locally wet areas, while in the Southwest progress was good. In the Ohio Valley growth ranged from slow to fair, but many fields were spotted and thin. Spring wheat was also delayed by coolness, but the crop was well stooled; oats made slow advance, while other small grains did well.

During the last decade winter wheat made fair advance in the Ohio Valley, but condition ranged widely, from poor to very good, and the crop was heading generally on short straw. Conditions were favorable in Kansas, with wheat practically all headed in the south-central and southeast. Harvest was under way in Texas and the crop was ripening in southern Oklahoma. Spring wheat was favored, while oats ranged from poor to good; other small grains continued to make satisfactory advance.

Corn.—During the first decade frequent rains and wet soil retarded corn planting in the Great Plains and the upper Mississippi Valley, although in Iowa seeding was fairly abreast of the season, with about the normal amount planted and some cultivation done. In Missouri, Illinois, and Indiana the weather was generally favorable, but from the upper Ohio Valley eastward the soil was too dry for germination. During the second decade the weather was mostly unfavorable for germination and growth of corn, with much cool, wet weather, although showers improved condition of the soil in the Ohio Valley. Planting made fair to very good advance in Iowa, but germination was slow and cultivation needed, with color mostly poor. During the last decade the weather was favorable for field work in the principal corn-producing sections and late planting advanced well. Some corn was up as far north as southern Michigan and southern North Dakota, while farther south considerable cultivation was accomplished. The situation in the central Corn Belt was better than last year, when planting had barely begun because of continued wetness.

Cotton.—During the first decade rain was still needed in the eastern Cotton Belt, but showers were helpful in central sections; there was too much moisture in western parts. In Texas progress of cotton was mostly good in the southern third, but rather poor elsewhere due to heavy rains, washing soil, and local storms, with planting and chopping delayed in the north. In Oklahoma planting was retarded by heavy rains, while in the Mississippi Valley States and northern east Gulf area the weather

was favorable. In the eastern belt germination and growth were slow with stands irregular and a general rain needed.

During the second decade conditions were favorable east of the Mississippi Valley, but unfavorable to the westward. In Texas progress of cotton was mostly good in the south third of the State, but elsewhere rains and wet soil were unfavorable, with cultivation and chopping mostly at a standstill in the northern two-thirds. In Oklahoma, Arkansas, northern Louisiana, Mississippi, and extreme western Tennessee there was too much rain, with much cotton washed out and many lowlands flooded. To the eastward of this area showers were very beneficial and progress of the crop was mostly fair to good.

During the last decade night temperatures were too low for good growth, but rainfall was light over the central areas where it had been wet previously, which made conditions more favorable. In Texas progress of cotton was good in the south third, though the nights were too cool; elsewhere it was rather poor, while in large areas the soil was too wet to work and fields were becoming grassy. In Oklahoma conditions were mostly favorable and advance was generally very good and planting advanced rapidly in the west and north. In central portions the weather favored drying out the soil and some cultivation was accomplished, but in general, the soil was too wet, hindering working. In eastern areas showers were helpful, but parts were still too dry. Chopping was becoming more active, but field work was hindered by rains locally.

Miscellaneous crops.—Pastures and meadows were unfavorably affected by the dry weather in the eastern and southeastern sections of the country, but elsewhere conditions were mostly satisfactory, especially in the great western grazing area. Livestock were favored generally, although there was some delay to shearing locally; lambing was still progressing at the end of the month in limited areas.

Except for some slight frost injury to tender truck and potatoes in the more northern States, these crops did well throughout the month, although rain was needed in some parts. Sugar beet thinning advanced in western States, while sugarcane was benefited by showers in Louisiana. Tobacco transplanting made only slow progress in Kentucky, but plants were healthy, although small, in Wisconsin. Fruits continued satisfactory advance, with late reports on the effect of the April freeze in the important commercial apple sections of the Virginias indicating that damage was spotted and, in general, less than at first feared.